**BILLING CODE 3510-22-P**

**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**RIN 0648-XG799**

# Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to City of Juneau Waterfront Improvement Project

**AGENCY**: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice; issuance of an incidental harassment authorization.

**SUMMARY**: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that we have issued an incidental harassment authorization (IHA) to the City and Borough of Juneau (CBJ), Alaska, to take small numbers of marine mammals, by harassment, incidental to the Juneau dock and harbor waterfront improvement project.

**DATES**: This authorization is effective from July 15, 2019, through July 14, 2020.

**FOR FURTHER INFORMATION CONTACT**: Shane Guan, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as the issued IHA, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act*. In case of problems accessing these documents, please call the contact listed above.

**SUPPLEMENTARY INFORMATION**:

## Background

The MMPA prohibits the "take" of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stocks for taking for certain subsistence uses (referred to in shorthand as "mitigation"); and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth.

**Summary of Request**

On October 25, 2018, City and Borough of Juneau (CBJ) submitted a request to NMFS requesting an IHA for the possible harassment of small numbers of harbor seals incidental to the City of Juneau Dock and Harbor waterfront improvement project in Juneau, Alaska, from June 15, 2019 to June 14, 2020. After receiving the revised project description and the revised IHA application, NMFS determined that the IHA application is adequate and complete on January 30, 2019. Neither the CBJ nor NMFS expect mortality or serious injury to result from this activity

and, therefore, an IHA is appropriate. On April 17, 2019, CBJ sent a request to NMFS to change the IHA dates to cover the period between July 15, 2019, and July 14, 2020. NMFS has issued an IHA to CBJ for the take by Level B harassment of harbor seal (*Phoca vitulina*) incidental to its waterfront improvement project.

**Description of Proposed Activity**

*Overview*

The purpose of the CBJ's project is to improve the downtown waterfront area within Gastineau Channel in Juneau, Alaska, to accommodate the needs of the growing cruise ship visitor industry and its passengers while creating a waterfront that meets the expectations of a world-class facility. The project would meet the needs of an expanding cruise ship industry and its passengers by creating ample open space thereby decreasing congestion and improving pedestrian circulation.

*Dates and Duration*

Construction of the CBJ waterfront improvements project is planned to occur between May 15, 2019 and August 31, 2020. CBJ is requesting an IHA for one year with an effective date of July 15, 2019 as in-water work will not proceed until July 15 or later and it is anticipated all in-water work will be completed prior to July 15, 2020.

*Specified Geographic Region*

The project area is at downtown waterfront within the Gastineau Channel in Juneau, Alaska (Figure 1 of the IHA application). The channel separates Juneau on the mainland side from Douglas (now part of Juneau), on Douglas Island. The channel is navigable by large ships, only from the southeast, as far as the Douglas Bridge, which is approximately 0.5 mile north of the project area. The channel north of the bridge is navigable by smaller craft and only at high

tide. The channel at the project area is approximately 0.7 mile wide. It is located within Section 23, Township 41 South, Range 67 East of the Copper River Meridian.

*Detailed Description of the CBJ Waterfront Improvement Project*

The proposed CBJ waterfront improvements project would construct a pile supported deck along the waterfront to meet the needs of an expanding cruise ship industry and its passengers by creating ample open space thereby decreasing congestion and improving pedestrian circulation. More details of the CBJ waterfront improvement project are provided in the **Federal Register** notice for the proposed IHA (84 FR 7880; March 5, 2019) and are not repeated here. There is no change from the description of the project activities that is provided in the **Federal Register** notice for the proposed IHA.

A list of pile driving and removal activities is provided in Table 1. The total number of days that involve in-water pile driving is estimated to be 82 days.

**Table 1. Summary of in-water pile driving activities.**

| Method | Pile type and size | Total # piles | # piles/ day | Pile driving /removal duration (sec.) per pile (vibratory) or strikes per pile (impact) | Work days |
|---|---|---|---|---|---|
| Vibratory pile removal | Timber piles, unknown diameter but assumed to be no more than 14-in | 100 | 10 | 900 | 10 |
| Vibratory piling for supported dock | Steel piles, 16-in | 42* | 5 | 5400 | 9 |
| Impact proofing for supported dock | Steel piles, 16-in | 42* | 5 | 150 | 9 |
| Vibratory piling for supported dock | Steel piles, 18-in | 45* | 5 | 5400 | 9 |
| Impact proofing for supported dock | Steel piles, 18-in | 45* | 5 | 150 | 9 |
| Vibratory piling for temporary piles | Steel piles, 18-in | 87 | 5 | 5400 | 18 |

| | | | | | |
|---|---|---|---|---|---|
| Vibratory pile removal for temporary piles | Steel piles, 18-in | 87 | 5 | 900 | 18 |
| **Total** | | **274** | | | **82** |

*Vibratory driving and impact proofing will occur on separate days.

**Comments and Responses**

A notice of NMFS' proposal to issue an IHA was published in the **Federal Register** on March 5, 2019 (84 FR 7880). During the 30-day public comment period, NMFS received a comment letter from the Marine Mammal Commission (Commission). Specific comments and responses are provided below.

*Comment 1*: The Commission recommends that NMFS refrain from implementing its proposed renewal process and instead use abbreviated **Federal Register** notices and reference existing documents to streamline the IHA process. If NMFS adopts the proposed renewal process, the Commission recommends that NMFS provide the Commission and the public a legal analysis supporting its conclusion that the process is consistent with section 101(a)(5)(D) of the MMPA.

*Response*: The notice of the proposed IHA expressly notifies the public that under certain, limited conditions an applicant could seek a renewal IHA for an additional year. The notice describes the conditions under which such a renewal request could be considered and expressly seeks public comment in the event such a renewal is sought. Additional reference to this solicitation of public comment has recently been added at the beginning of the **Federal Register** notices that consider renewals, requesting input specifically on the possible renewal itself. NMFS appreciates the streamlining achieved by the use of abbreviated **Federal Register** notices and intends to continue using them for proposed IHAs that include minor changes from previously issued IHAs, but which do not satisfy the renewal requirements. However, we believe

our method for issuing renewals meets statutory requirements and maximizes efficiency. However, importantly, such renewals will be limited to circumstances where: The activities are identical or nearly identical to those analyzed in the proposed IHA; monitoring does not indicate impacts that were not previously analyzed and authorized; and, the mitigation and monitoring requirements remain the same, all of which allow the public to comment on the appropriateness and effects of a renewal at the same time the public provides comments on the initial IHA. NMFS has, however, modified the language for future proposed IHAs to clarify that all IHAs, including renewal IHAs, are valid for no more than one year and that the agency will consider only one renewal for a project at this time. In addition, notice of issuance or denial of a renewal IHA will be published in the **Federal Register**, as they are for all IHAs. The option for issuing renewal IHAs has been in NMFS' incidental take regulations since 1996. We will provide any additional information to the Commission and consider posting a description of the renewal process on our website before any renewal is issued utilizing this process.

**Description of Marine Mammals in the Area of Specified Activities**

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SAR; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*).

Table 2 lists all species with expected potential for occurrence in the Southeast Alaskan waters and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2018). PBR is defined by the MMPA as the

maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. Alaska Marine Mammal SARs (Carretta *et al.*, 2017). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2017 SARs (Muto *et al.*, 2018); and draft 2018 SARs (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports).*

**Table 2. Marine mammals with potential presence within the proposed project area.**

| Common name | Scientific name | Stock | ESA/MMPA status; Strategic (Y/N)[1] | Stock abundance (CV, $N_{min}$, most recent abundance survey)[2] | PBR | Annual M/SI[3] |
|---|---|---|---|---|---|---|
| Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales) | | | | | | |
| Family Balaenopteridae | | | | | | |
| Humpback whale | *Megaptera novaeangliae* | Central North Pacific | E/D; Y | 10,103 (0.300, 7,890) | 82 | 8.5 |
| Family Delphinidae | | | | | | |
| Killer whale | *Orcinus orca* | Eastern N. Pacific Northern resident | N | 261 (NA, 261) | 1.96 | 0 |
| | | Eastern N. Pacific Alaska Resident | N | 2,347 (NA, 2,347) | 24 | 1 |
| Order Carnivora – Superfamily Pinnipedia | | | | | | |
| Family Phocidae (earless seals) | | | | | | |
| Harbor seal | *Phoca vitulina* | Lynn Canal/Stephens Passage | N | 9,478 (NA, 8,605) | 155 | 0 |

[1]Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.
[2]NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region*. CV is coefficient of variation; $N_{min}$ is the minimum estimate of stock abundance.

All species that could potentially occur in the proposed survey areas are included in Table 2. However, the presence of humpback whale and killer whale are extremely rare, and the implementation of monitoring and mitigation measures are such that take is not expected to occur, and they are not discussed further beyond the explanation provided here. Although these two species have been sighted within the Gastineau Channel near the vicinity of the project area, CBJ proposes to implement strict monitoring and mitigation measures and implement shutdown to prevent any takes of these two species. Thus, the take of this marine mammal stock can be avoided, as their occurrence would be considered unlikely and mitigation and monitoring is expected to prevent take should they occur (see details in Mitigation section).

*Marine Mammal Hearing*

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing

ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). Subsequently, NMFS (2016) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. The functional groups and the associated frequencies are indicated below (note that these frequency ranges correspond to the range for the composite group, with the entire range not necessarily reflecting the capabilities of every species within that group):

- Low-frequency cetaceans (mysticetes): generalized hearing is estimated to occur between approximately 7 hertz (Hz) and 35 kilohertz (kHz);
- Mid-frequency cetaceans (larger toothed whales, beaked whales, and most delphinids): generalized hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High-frequency cetaceans (porpoises, river dolphins, and members of the genera Kogia and Cephalorhynchus; including two members of the genus Lagenorhynchus, on the basis of recent echolocation data and genetic data): generalized hearing is estimated to occur between approximately 275 Hz and 160 kHz;
- Pinnipeds in water; Phocidae (true seals): generalized hearing is estimated to occur between approximately 50 Hz to 86 kHz; and
- Pinnipeds in water; Otariidae (eared seals): generalized hearing is estimated to occur between 60 Hz and 39 kHz.

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.*, 2006; Kastelein *et al.*, 2009; Reichmuth *et al.*, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Three marine mammal species (two cetacean and one pinniped (*i.e.*, harbor seal) species) have the reasonable potential to co-occur with the proposed construction activity. Please refer to Table 2. Of the cetacean species that may be present, one species is classified as low-frequency cetaceans (*i.e.*, humpback whale) and one is classified as mid-frequency cetacean (*i.e.*, killer whale). However, as mentioned earlier, monitoring and mitigation measures will be implemented to avoid the take of these cetacean species.

**Potential Effects of Specified Activities on Marine Mammals and their Habitat**

This section includes a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat. The *Estimated Take by Incidental Harassment* section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The *Negligible Impact Analysis and Determination* section considers the content of this section, the *Estimated Take by Incidental Harassment* section, and the *Mitigation* section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

Potential impacts to marine mammals from the proposed CBJ waterfront improvement project are from noise generated during in-water pile driving and pile removal activities. A

detailed analysis of these effects is provided in the **Federal Register** notice of the proposed IHA (84 FR 7880; March 5, 2019) and is not repeated here.

**Estimated Take**

This section provides an estimate of the number of incidental takes authorized through this IHA, which will inform both NMFS' consideration of whether the number of takes is "small" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would be by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to noise generated from vibratory pile driving and removal. Based on the nature of the activity and the anticipated effectiveness of the mitigation measures (*i.e.*, shutdown measures – discussed in detail below in Proposed Mitigation section), Level A harassment is neither anticipated nor proposed to be authorized.

As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

Described in the most basic way, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be

behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) and the number of days of activities. Below, we describe these components in more detail and present the take estimate.

*Acoustic Thresholds*

Using the best available science, NMFS has developed acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.*, 2007, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 µPa (rms) for continuous (*e.g.* vibratory pile-driving, drilling) and above 160 dB re 1 µPa (rms) for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources.

Applicant's proposed activity includes the generation of impulse (impact pile driving) and continuous (vibratory pile driving and removal) sources; and, therefore, both 160- and 120-dB re 1 μPa (rms) are used.

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Technical Guidance, 2016 and 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). Applicant's proposed activity would generate and non-impulsive (vibratory pile driving and pile removal) noises. These thresholds were developed by compiling and synthesizing the best available science and soliciting input multiple times from both the public and peer reviewers to inform the final product and are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance*.

**Table 3. Current Acoustic Exposure Criteria for Non-explosive Sound Underwater.**

| Hearing Group | PTS Onset Thresholds | | Behavioral Thresholds | |
|---|---|---|---|---|
| | **Impulsive** | **Non-impulsive** | **Impulsive** | **Non-impulsive** |
| **Low-Frequency (LF) Cetaceans** | $L_{pk,flat}$: 219 dB<br>$L_{E,LF,24h}$: 183 dB | $L_{E,LF,24h}$: 199 dB | $L_{rms,flat}$: 160 dB | $L_{rms,flat}$: 120 dB |
| **Mid-Frequency (MF) Cetaceans** | $L_{pk,flat}$: 230 dB<br>$L_{E,MF,24h}$: 185 dB | $L_{E,MF,24h}$: 198 dB | | |
| **High-Frequency (HF) Cetaceans** | $L_{pk,flat}$: 202 dB<br>$L_{E,HF,24h}$: 155 dB | $L_{E,HF,24h}$: 173 dB | | |
| **Phocid Pinnipeds (PW) (Underwater)** | $L_{pk,flat}$: 218 dB<br>$L_{E,PW,24h}$: 185 dB | $L_{E,PW,24h}$: 201 dB | | |
| **Otariid Pinnipeds (OW)** | $L_{pk,flat}$: 232 dB<br>$L_{E,OW,24h}$: 203 dB | $L_{E,OW,24h}$: 219 dB | | |

| | | | | |
|---|---|---|---|---|
| **(Underwater)** | | | | |

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (Lpk) has a reference value of 1 µPa, and cumulative sound exposure level (LE) has a reference value of 1µPa2s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

*Ensonified Area*

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds.

Source Levels

Source levels for vibratory driving and removal of 16- and 18-inch (in) steel piles are based on measurement of vibratory pile removal of 16- and 24-in steel piles by the Navy in Puget Sound (NAVFAC 2015). The measured $SPL_{rms}$ at 10 meters (m) was 161 dB re 1 µPa. This source level is revised from the proposed IHA where a different measurement of 156.2 dB at 7 m from Kake, Alaska, was used. This change reflects our discussion with the Commission that the Kake's measurement could be underestimated due to soft substrate.

Source levels for impact pile driving of 16-in and 18-in steel piles are based on JASCO's pile driving review for a 24-in steel pile (Yurk *et al.*, 2015). The values are 175 dB re 1 $\mu Pa^2$-s, 190 dB re 1 µPa, and 205 dB re 1 µPa for single strike SEL, $SPL_{rms}$, and $SPL_{pk}$, respectively.

Source level for vibratory timber pile removal is based on measurements of vibratory pile removal at Port Townsend, Washington (WSDOT, 2011). The measured level was 150 dB re 1 µPa at 52 ft, and is corrected to 153 dB re 1 µPa at 10 m.

A summary of the source levels are provided in Table 4.

**Table 4. Summary of in-water pile driving source levels (at 10 m from source).**

| Method | Pile type / size (inch) | SEL, dB re 1 µPa$^2$-s | $SPL_{rms}$, dB re 1 µPa | $SPL_{pk}$, dB re 1 µPa |
|---|---|---|---|---|
| Vibratory driving / removal | Steel, 16- and 18-in | 161 | 161 | - |
| Vibratory removal | Timber | 153 | 153 | - |
| Impact pile driving (proof) | Steel, 16- and 18-in | 175 | 190 | 205 |

These source levels are used to compute the Level A harassment zones and to estimate the Level B harassment zones. For Level A harassment zones, since the peak source levels for both pile driving are below the injury thresholds, cumulative SEL were used to do the calculations using the NMFS acoustic guidance (NMFS 2018).

*Estimating Harassment Zones*

The Level B harassment ensonified areas for vibratory removal of timber piles are based on the above source level of 153 $dB_{rms}$ re 1 µPa at 10 m, applying practical spreading loss of 15*log(R) for transmission loss calculation. The derived distance to the 120-dB Level B zone is 1,585 m.

For Level B harassment ensonified areas for vibratory pile driving and removal of the 16- and 18-in steel piles, the distance is based on source level of 161 dB re 1 µPa at 10 m, applying practical spreading loss of 15*log(R) for transmission loss calculation. The derived distance to the 120-dB zone is 5,412 m. This is an increase from 1,585 m provided in the proposed IHA when a lower source level of 156.2 dB at 7 m was used. However, the land mass from the opposite shore intercept the sound propagation at about 2,000 m, therefore, the distance of 2,000 m is considered as the maximum distance for Level B harassment for vibratory pile driving of 16- and 18-in piles.

For Level B harassment ensonified areas for impact proofing of 16-in and 18-in steel piles, the distance is based on source level of 190 dB re 1 µPa at 10 m, applying practical spreading loss of 15*log(R) for transmission loss calculation. The derived distance to the 160-dB zone is 1,000 m.

For Level A harassment, calculation is based on pile driving duration of each pile and the number of piles installed or removed per day, using NMFS optional spreadsheet.

The modeled distances to Level A and Level B harassment zones for various marine mammals are provided in Table 5. As discussed above, the only marine mammal that could occur in the vicinity of the project area is the harbor seal (phocid), and, on rare occasions, humpback and killer whales (mid-frequency cetacean). The inclusion of other marine mammal hearing groups in Table 5 is for information purposes.

**Table 5. Modeled distances to harassment zones.**

| Pile type, size & pile driving method | Injury distance (m) | | | | | Level B ZOI (m) |
|---|---|---|---|---|---|---|
| | LF cetacean | MF cetacean | HF cetacean | Phocid | Otariid | |
| Vibratory drive 16- & 18-in pile (5400 s/pile, 5 piles/day) | 8.8 | 0.8 | 13 | 5.3 | 0.4 | 2000 |
| Vibratory removal 16- & 18-in temporary pile (900 s/pile, 5 piles/day) | 2.7 | 0.2 | 3.9 | 1.6 | 0.1 | 2000 |
| Vibratory removal timber pile (900 s/pile, 10 piles/day) | 3.7 | 0.3 | 5.4 | 2.2 | 0.2 | 1585 |
| Impact proof of 16- & 18-in pile (150 strikes/pile, 5 piles/day) | 241.4 | 8.6 | 287.6 | 129.2 | 9.4 | 1000 |

*Marine Mammal Occurrence*

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

There are no reliable density estimates for marine mammals (harbor seal, humpback whale, and killer whale) in the project area. However, there are good observations of harbor seal numbers that generally occur in the project area.

Harbor seals are residents in the project vicinity and observed within the action area on a regular basis. Typically there are one to two harbor seals present near the new Port of Juneau Cruise Ship Berths and can be found there year round. In addition, a smaller amount of harbor seals have been observed near the Douglas Island Pink and Chum, Inc. (DIPAC) salmon hatchery which is approximately five km north of the project area. The applicant states that based on observations and discussion with the hatchery personnel, a maximum of 41 harbor seals have been observed transiting in nearby areas between the hatchery and the project area. This number in addition to the 1-2 resident harbor seals at the project area makes a total maximum harbor sea that could be affected by in-water pile driving during a typical day to be 43.

Humpback whale and killer whale are rarely seen in the vicinity of the project area. CBJ will implement shutdown measures if these species are sighted moving towards the Level B harassment zone.

*Take Calculation and Estimation*

Here we describe how the information provided above is brought together to produce a quantitative take estimate.

For harbor seal takes, the total take number is calculated as: Take = animal number in a typical day near the project area x operating days = 43 x 82 = 3526 animals. However, 18 of these pile driving days will involve impact pile proofing that results in a larger Level A harassment zone (129 m). If a harbor seal would be missed during marine mammal monitoring and slip into the Level A harassment zone during impact pile proofing, Level A harassment

could occur. Based on discussion with the Commission, we estimated that up to 4 individual harbor seals could be exposed by Level A harassment each day during these 18 days. Therefore, we estimate that 72 incidents of Level A harassment of harbor seal could occur.

A summary of estimated takes in relation to population percentage is provided in Table 6.

**Table 6. Estimated Take Numbers.**

| Species | Estimated Level A take | Estimated Level B take | Estimated total take | Abundance |
|---|---|---|---|---|
| Harbor seal | 72 | 3454 | 3526 | 9,478 |

**Mitigation**

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned) the likelihood of effective implementation (probability implemented as planned); and

2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

*Mitigation for Marine Mammals and their Habitat*

1. Time Restriction.

Work would occur only during daylight hours, when visual monitoring of marine mammals can be conducted.

2. Establishing and Monitoring Level A and Level B Harassment Zones and Shutdown Zones.

CBJ shall establish shutdown zones that encompass the distances within which marine mammals except harbor seal could be taken by Level B harassment (see Table 5 above).

For harbor seals, CBJ shall establish shutdown zones that encompass the distances within which a seal could be taken by Level A harassment (see Table 5 above). For Level A harassment zones that are less than 10 m from the source, a minimum of 10 m distance should be established as a shutdown zone.

A summary of shutdown zones is provided in Table 7.

**Table 7. Shutdown Zones for Various Pile Driving Activities and Marine Mammal Hearing Groups.**

| Pile type, size & pile driving method | Shutdown distance (m) | |
|---|---|---|
| | Cetacean | Phocid |
| Vibratory drive and removal of 16- & 18-in steel piles | 2,000 | 10 |
| Vibratory removal timber pile (900 s/pile, 10 piles/day) | 1,585 | |
| Impact proof of 16- & 18-in pile (150 strikes/pile, 5 piles/day) | 1,000 | 130 |

CBJ shall also establish a Zone of Influence (ZOI) for harbor seals based on the Level B harassment zones for take monitoring where received underwater SPLs are higher than 160 $dB_{rms}$ re 1 µPa for impulsive noise sources (impact pile driving) and 120 $dB_{rms}$ re 1 µPa for continuous noise sources (vibratory pile driving and pile removal). For all other marine mammals, the ZOI is the same as the shutdown zones.

NMFS-approved protected species observers (PSO) shall conduct an initial 30-minute survey of the shutdown zones to ensure that no marine mammals are seen within the zones before pile driving and pile removal of a pile segment begins. If marine mammals are found within the shutdown zone, pile driving of the segment would be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor would wait 15 minutes. If no marine mammals are seen by the observer in that time it can be assumed that the animal has moved beyond the shutdown zone.

3. Soft-start.

A "soft-start" technique is intended to allow marine mammals to vacate the area before the impact pile driver reaches full power. Whenever there has been downtime of 30 minutes or more without impact pile driving, the contractor will initiate the driving with ramp-up procedures described below.

Soft start for impact hammers requires contractors to provide an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period, then two subsequent three-strike sets. Each day, CBJ will use the soft-start technique at the beginning of impact pile driving, or if impact pile driving has ceased for more than 30 minutes.

4. Shutdown Measures.

CBJ shall implement shutdown measures if a marine mammal is detected within or enters a shutdown zone listed in Table 7.

Further, CBJ shall implement shutdown measures if the number of authorized takes for harbor seals reaches the limit under the IHA and if seals are sighted within the vicinity of the project area and are approaching the Level B harassment zone during in-water construction activities.

Based on our evaluation of the required measures, NMFS has determined that the prescribed mitigation measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

**Monitoring and Reporting**

In order to issue an IHA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed

action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

*Proposed Monitoring Measures*

CBJ shall employ NMFS-approved PSOs to conduct marine mammal monitoring for its waterfront improvement project at Juneau Dock and Harbor. The purposes of marine mammal monitoring are to implement mitigation measures and learn more about impacts to marine

mammals from CBJ's construction activities. The PSOs will observe and collect data on marine mammals in and around the project area for 30 minutes before, during, and for 30 minutes after all pile removal and pile installation work. NMFS-approved PSOs shall meet the following requirements:

1. Independent observers (*i.e.*, not construction personnel) are required;

2. At least one observer must have prior experience working as an observer;

3. Other observers may substitute education (undergraduate degree in biological science or related field) or training for experience;

4. Where a team of three or more observers are required, one observer should be designated as lead observer or monitoring coordinator. The lead observer must have prior experience working as an observer; and

5. NMFS will require submission and approval of observer CVs.

Monitoring of marine mammals around the construction site shall be conducted using high-quality binoculars (*e.g.*, Zeiss, 10 x 42 power).

CBJ shall employ a minimum of 2 PSOs to observe and collect data on marine mammals in and around the pile driving vicinity.

PSOs shall be placed at high evaluation locations such as the boardwalk and the observation deck of the City Library to conduct marine mammal monitoring.

PSOs will work shifts of a maximum of four consecutive hours and will work no more than 12 hours in any 24-hour period.

6. PSOs shall collect the following information during marine mammal monitoring:

- Date and time that monitored activity begins and ends for each day conducted (monitoring period);

- Construction activities occurring during each daily observation period, including how many and what type of piles driven;
- Deviation from initial proposal in pile numbers, pile types, average driving times, etc.;
- Weather parameters in each monitoring period (*e.g.*, wind speed, percent cloud cover, visibility);
- Water conditions in each monitoring period (*e.g.*, sea state, tide state);
- For each marine mammal sighting:
  - Species, numbers, and, if possible, sex and age class of marine mammals;
  - Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;
  - Location and distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point; and
  - Estimated amount of time that the animals remained in the Level B zone;
- Description of implementation of mitigation measures within each monitoring period (*e.g.*, shutdown or delay);
- Other human activity in the area within each monitoring period

To verify the required monitoring distance, the shutdown zones and ZOIs will be determined by using a range finder or hand-held global positioning system device.

CBJ is required to submit a draft monitoring report within 90 days after completion of the construction work or the expiration of the IHA (if issued), whichever comes earlier. In the case if CBJ intends to renew the IHA (if issued) in a subsequent year, a monitoring report should be submitted 60 days before the expiration of the current IHA (if issued). This report would detail

the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed. NMFS would have an opportunity to provide comments on the report, and if NMFS has comments, CBJ would address the comments and submit a final report to NMFS within 30 days.

In addition, NMFS would require CBJ to notify NMFS' Office of Protected Resources and NMFS' Alaska Stranding Coordinator within 48 hours of sighting an injured or dead marine mammal in the construction site. CBJ shall provide NMFS and the Stranding Network with the species or description of the animal(s), the condition of the animal(s) (including carcass condition, if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

In the event that CBJ finds an injured or dead marine mammal that is not in the construction area, CBJ would report the same information as listed above to NMFS as soon as operationally feasible.

**Negligible Impact Analysis and Determinations**

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as

effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

Although some individual harbor seals are estimated to experience Level A harassment in the form of PTS if they stay within the Level A harassment zone during the entire pile driving for the day, the degree of injury is expected to be mild and is not likely to affect the reproduction or survival of the individual animals. It is expected that, if hearing impairment occurs, most likely the affected animal would lose a few dB in its hearing sensitivity, which in most cases is not likely to affect its survival and recruitment. Hearing impairment that might occur for these individual animals would be limited to the dominant frequency of the noise sources, *i.e.*, in the low-frequency region below 2 kHz. Nevertheless, as for all marine mammal species, it is known that in general these seals will avoid areas where sound levels could cause hearing impairment. Therefore it is not likely that an animal would stay in an area with intense noise that could cause severe levels of hearing damage.

Under the majority of the circumstances, anticipated takes are expected to be limited to short-term Level B harassment. Harbor seals present in the vicinity of the action area and taken by Level B harassment would most likely show overt brief disturbance (startle reaction) and avoidance of the area from elevated noise levels during pile driving and pile removal. Given the limited estimated number of incidents of Level A and Level B harassment and the limited, short-

term nature of the responses by the individuals, the impacts of the estimated take cannot be reasonably expected to, and are not reasonably likely to, rise to the level that they would adversely affect the species at the population level, through effects on annual rates of recruitment or survival.

There are no known important habitats, such as rookeries or haulouts, in the vicinity of the CBJ's waterfront improvement construction project. The project also is not expected to have significant adverse effects on affected marine mammals' habitat, including prey, as analyzed in detail in the "**Anticipated Effects on Marine Mammal Habitat**" section.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- Some individual harbor seals are anticipated to experience a mild level of PTS, but the degree of PTS is not expected to affect their fitness;
- Most adverse effects to harbor seals are temporary behavioral harassment; and
- No biologically important area is present in or near the proposed construction area.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS finds that the total marine mammal take from the proposed activity will have a negligible impact on all affected marine mammal species or stocks.

**Small Numbers**

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, NMFS compares the number of individuals anticipated to be taken to the most appropriate estimation of the relevant species or stock size in our determination of whether an authorization would be limited to small numbers of marine mammals.

The estimated take of harbor seal would be 35 percent of the population, if each single take were a unique individual. However, this is highly unlikely because the harbor seal in the vicinity of the project area shows site fidelity to small areas for periods of time that can extend between seasons. As discussed earlier, there are one to two resident harbor seals in the project vicinity and are observed within the action area on a regular basis. In addition, a smaller amount of harbor seals have been observed near the DIPAC salmon hatchery which is approximately 5 km north of the project area. Therefore, the total maximum number of individual harbor seals at the project area that could be affect by in-water pile driving during a typical day is assumed to be 43 individuals.

Based on the analysis contained herein of the proposed activity (including the prescribed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of each species or stock will be taken relative to the population size of the affected species or stocks.

**Unmitigable Adverse Impact Subsistence Analysis and Determination**

The proposed construction project will occur near but not overlap the subsistence areas in Juneau. The Alaska Department of Fish and Game (ADF&G) was contacted by CBJ regarding subsistence uses in Gastineau Channel and it was confirmed that Gastineau Channel is not a

subsistence use area for harbor seals (CBJ, 2018). Therefore, the proposed project will not adversely impact the availability of any marine mammal species or stocks that are commonly used for subsistence purposes in the Juneau area.

Based on the analysis contained herein of the likely effects of the specified activity on subsistence activities, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the proposed activity will not have unmitigable adverse impact on subsistence use of marine mammals in the project area.

**National Environmental Policy Act**

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our proposed action (*i.e.*, the issuance of an incidental harassment authorization) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (incidental harassment authorizations with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of the proposed IHA qualifies to be categorically excluded from further NEPA review.

**Endangered Species Act (ESA)**

No incidental take of ESA-listed species is authorized or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

**Authorization**

As a result of these determinations, NMFS has issued an IHA to the City and Borough of Juneau for the Juneau Dock and Harbor waterfront improvement project in Juneau, Alaska, provided the previously described mitigation, monitoring, and reporting requirements are incorporated.

Dated: May 21, 2019.

**Catherine Marzin,**

*Acting Director,*

*Office of Protected Resources,*

*National Marine Fisheries Service.*

[FR Doc. 2019-10973 Filed: 5/24/2019 8:45 am; Publication Date: 5/28/2019]